Worldwide Information Services Market Forecasts 1989-1994

Presentation to Subscribers
November 14, 1989

INPUT®

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Agenda

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- Introduction
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- Worldwide Summary
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Project Overview

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Project Purpose

- Conduct comprehensive market assessment
- Identify major technology trends
- Identify driving/inhibiting forces
- Assess market entry considerations
- Provide five-year market projections

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Project Scope/Methodology

- Project scope
  - Establish international data baseline
  - Part of ongoing research program
  - Based on standardized process
- Methodology
  - Comprehensive structured survey
    - 1,120 Total
  - Native language usage in surveys
  - Extensive secondary research
    - Trade journals
    - Industry consultants
  - Cross reference research
    - Department of Commerce
  - Results presented in U.S. dollars
    - Standard conversion rate
  - "Current dollars" include inflationary growth

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Project Scope/Methodology

Countries/Areas

Africa*	Hong Kong	Other W. Europe*
Argentina	Italy	Singapore
Australia	Japan	Spain
Belgium	Korea(S)	Sweden
Brazil	Mexico	Switzerland
Canada	Middle East*	Taiwan
Eastern Europe*	Netherlands	United Kingdom
Finland	New Zealand	United States
France	Norway	Venezuela
Germany(W)	Other Asia*	

* Area covered as a single market

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Project Scope/Methodology

Regions

Asia/Pacific

Europe
(Western and Eastern)

Middle East/
Africa

Latin America
(Mexico, Central/
South America, Caribbean)

North America
(U.S. and Canada)

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Worldwide Market Summary

Trends and Influences

Developing countries

- Information society in next century
  - Information is economic asset
- Industrial development is key priority
  - Technological necessity for information services
  - Limited national resources
- Mini/micro systems
  - Primary processing platform
- Industry-specific software
  - Meet unique needs

Developed countries

- Integrated solutions
  - System complexity increasing

All countries

- Network services becoming increasingly important
  - National value-added services
  - Local area networks growing

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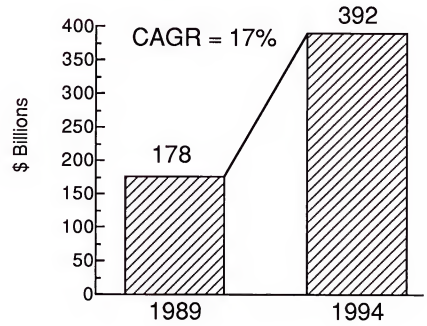
Worldwide Market Summary

Five-Year Forecast
1989-1994



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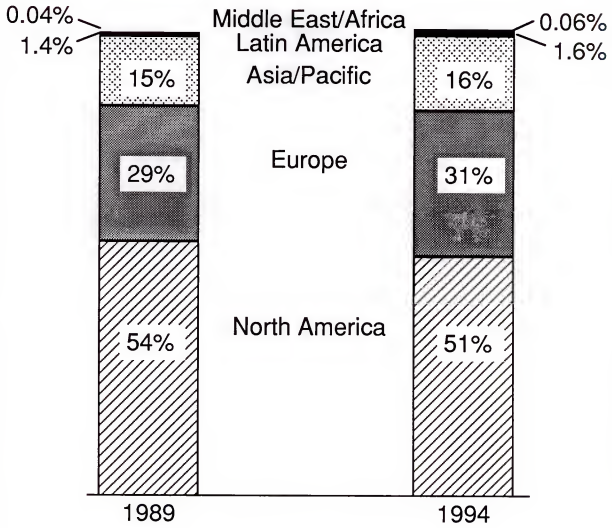
Worldwide Market Summary

Market Distribution



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Worldwide Market Summary

Leading Countries

Countries	1989 Revenues ($ Billions)	Percent Total
United States	94	53
Japan	22	12
France	13	7
West Germany	10	6
United Kingdom	9	5
Total	148	83

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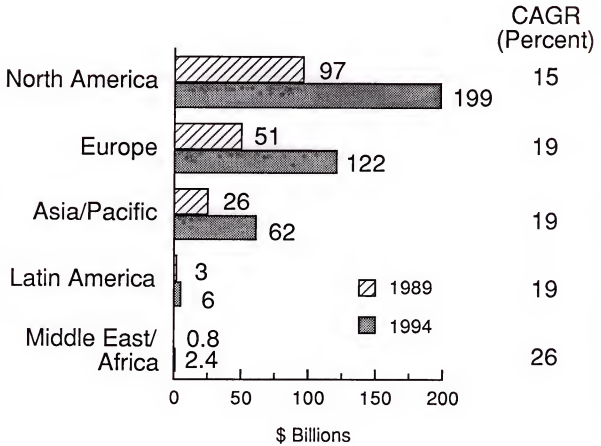
Worldwide Market Summary by Geographic Area



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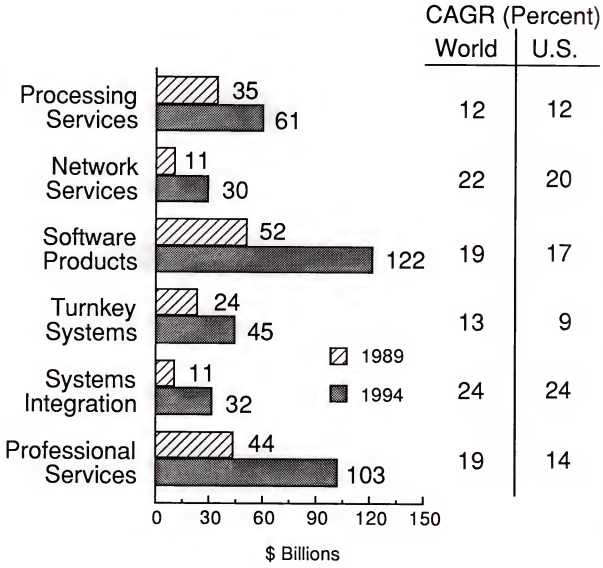
Worldwide Market Summary by Delivery Mode



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Worldwide Market Summary

GNP Growth Projections

	GNP Growth		
	1985	1989	1990
Canada	5.5	3.9	2.9
United States	5.4	3.1	2.6
Japan	3.6	4.8	4.7
France	2.3	2.9	2.9
West Germany	1.2	2.2	3.3
Italy	2.9	3.5	3.2
United Kingdom	2.8	3.7	1.5
Africa	3.5	2.3	3.3
Asia	6.7	6.4	6.2
Europe	2.3	2.3	3.0
Middle East	(1.4)	2.3	2.8
Western Hemisphere	3.6	0.8	3.2

Sources: World Bank Statistical Tables

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Regional Summary

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Asia/Pacific Region

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Asia/Pacific Region

Political/Economic Setting

- Most diverse region
  - Geographically
  - Politically
  - Culturally
- Economies generally stable
  - Some struggling
  - Many with low economic base
- Political stability varies
  - Key markets stable
  - Developing countries fragile
  - Some future uncertainty

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Asia/Pacific Countries

Basic Economic Data

	Population (Millions)	Population Growth Percent P.A.(1)	Per Capita GNP	
			$ Billions(2)	Growth Rate(3)
Australia	16	1.4	11.0	1.8
China (PRC)	1,069	1.3	0.3	5.2
Hong Kong	6	1.0	8.0	6.2(4)
Indonesia	171	1.7	0.5	4.5
Japan	122	0.4	15.7	4.2
Korea	23	3.1	2.7	6.4
Malaysia	17	2.2	1.8	4.1
New Zealand	3	0.6	7.8	0.9
Philippines	58	1.9	0.6	1.7
Singapore	3	0.8	7.9	7.2
Thailand	54	1.5	0.9	3.9
United States	244	0.8	18.5	1.5

Source: The World Bank

(1) 1987-2000
(2) 1987, Per Capita, Thousands
(3) 1987
(4) GDP Growth

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Corporate Earnings Projections

Key Asian Countries

	1988 (Percent)	1989 (Percent)
Hong Kong	24	15
Singapore	35	16
Korea (South)	23	20
Taiwan	10	10
Thailand	71	20
Philippines	47	20
Malaysia	33	18

Source: Tyndall-Newport Management

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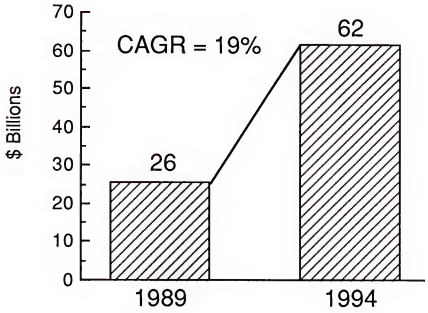
Regional Market Forecast

Asia/Pacific, 1989-1994



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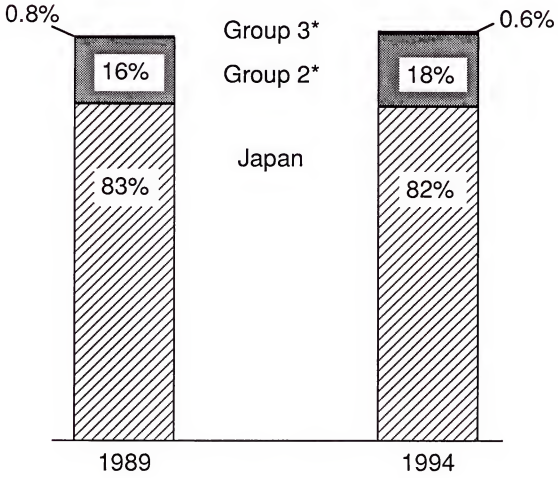
Market Distribution

Asia/Pacific, 1989 vs. 1994



* Group 2 - Australia, Hong Kong, India, New Zealand, South Korea, Singapore

Group 3 - All other Asia

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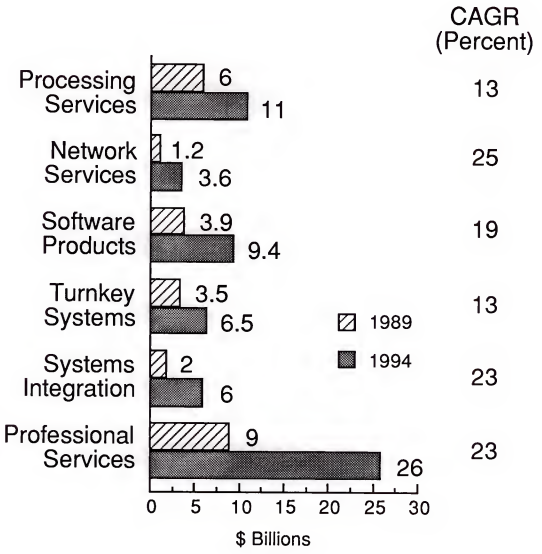
Market Forecast by Delivery Mode

Asia/Pacific, 1989-1994



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Asia/Pacific Region

Trends and Influences

- Driving forces
  - Technology value recognized
  - Improved labor skill a priority
  - National development a necessity
- Inhibiting forces
  - Future political stability a question
  - Western protectionism a concern
  - Western inflation reduces income
  - Domestic economic base extremely small

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Asia/Pacific Region

Market Entry Considerations

- Underdeveloped national infrastructure reduces opportunities
- Investment terms are long
- Vendor stability a question
- Cultural diversity makes marketing difficult
- Technology transfer a key need
- High competition from many areas
- Markets are dynamic, with growth potential

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European Region

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European Region

Political/Economic Setting

- 1992 etc. (merger and acquisitions)
- Forecast growth stronger (1992 effect)
- Growing strength of Brussels
- W. Germany and E. Germany
  - Growing opportunity in eastern Europe in the 1990s

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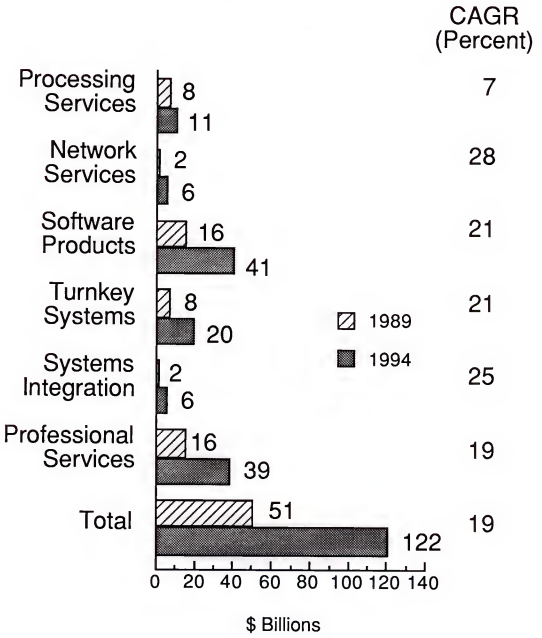
Market Forecast by Delivery Mode

Europe, 1989-1994



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European Region

Trends/Influences
(Drivers/Inhibitors)

- Single market
- Telecomm deregulation
- European equipment vendors vs. U.S. and Japan
- Standards (UNIX/OSI)
- Software and services vs. equipment margins
- Public procurement liberalization

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European Region

Market Entry Considerations

- Language/cultural, local representation
- Mergers and acquisitions challenge
- Developed vs. undeveloped areas
- EEC vs. EFTA
- Nonhomogeneous equipment base
- Pan-European or national strategy

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Latin American Region

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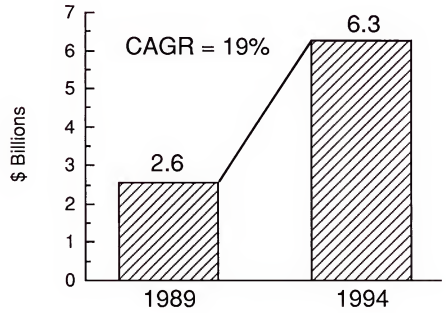
Regional Market Forecast

Latin America, 1989-1994



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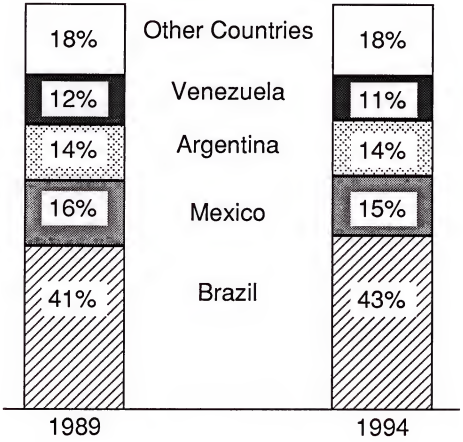
Market Distribution

Latin America, 1989 vs. 1994



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Latin American Region

Political/Economic Setting

- Politically unstable area
  - Some exceptions
  - Some positive steps
  - Continued unrest expected
- Economic uncertainty prevails
  - Extensive debt problems
  - Privatization just beginning
  - Some investment stimulation
  - Results uncertain

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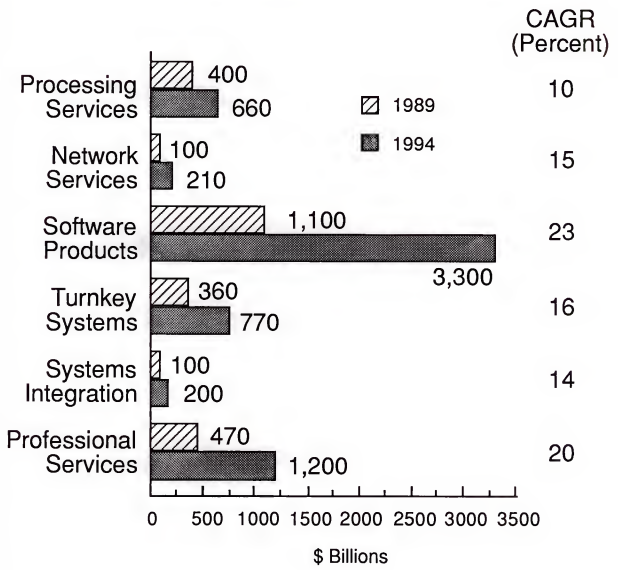
Market Forecast by Delivery Mode

Latin America, 1989-1994



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Latin American Region

Trends and Influences

- Driving forces
  - Training/education
  - Public sector spending
  - Technology incentives
  - Mini/micro growth
- Inhibiting forces
  - Stalled economies
  - High duties/protectionism
  - Far East competition
  - Software piracy

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Latin American Region

Market Entry Considerations

- Cautious optimism
- Areas of opportunity
  - Mini/micro software
  - Education
  - Office productivity tools
  - Manufacturing
  - Financial services
- Representatives necessary
  - Contacts
  - Process knowledge

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Middle East/Africa Region

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Middle East/Africa Region

Political/Economic Setting

- Political setting—Africa
  - South Africa precarious
  - Change slow but gaining momentum
  - Anti-aparthied act effective
  - Restriction reduction expected
  - Other Africa questionable
- Political setting—Middle East
  - Continued volatility
- Economic setting—Africa
  - South Africa dominant
  - U.S. disinvestment hurt
    - ° Trade imbalance resulted
    - ° Import surcharge imposed
  - 1988 real growth = 3.2%
- Economic setting—Middle East
  - Continued single product orientation
  - Military spending a major drain

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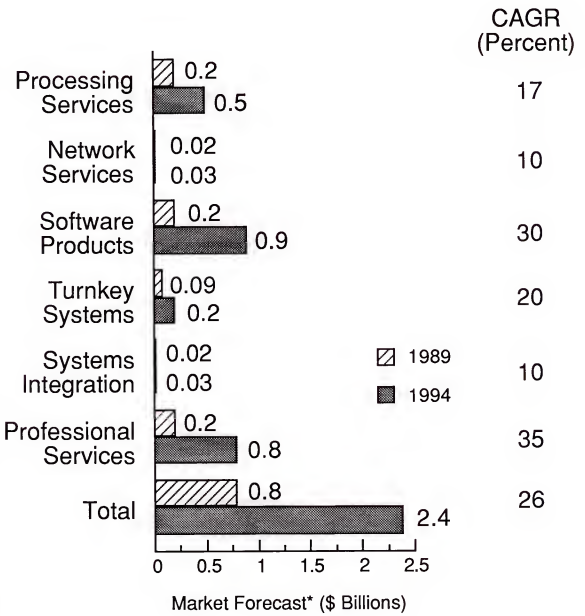
Market Forecast

Middle East/Africa, 1989-1994



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Middle East/Africa Region

Trends and Influences

- Driving forces—Africa
  - Greater mini/micro availability
  - 4GLs in large companies
  - Economic expansion
  - Network services development
  - Education
- Inhibiting forces—Africa
  - Disinvestment
  - Labor skill level
  - Political policies
  - Social unrest

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Middle East/Africa Region

Trends and Influences

- Driving forces—Middle East
  - Oil field development
  - Industrial development
  - Production control
  - Education/training
  - Technological prestige
- Inhibiting forces—Middle East
  - Political environment unstable
  - Total solution required
  - Local representation/ownership
  - Software piracy continues

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Middle East/Africa Region

Market Entry Considerations

- South Africa
  - Long-term commitment needed
  - Local knowledge necessary
    - ° Social customs
    - ° Political customs
  - Investment in local (black) firms suggested
  - Local staff training
- Middle East
  - Local representative necessary
  - Long sales cycle common
  - Noncontracted gratuities common
  - Staff selection caution necessary

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Country Profiles

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Australia

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Market Forecast—Australia

Political/Economic Setting

- Political environment changing
  - Reducing social welfare focus
  - Labor union power declining
  - Private enterprise orientation increasing
- Economic base strengthening
  - Increased privatization
    - Financial services
    - Telecommunications
  - Increased services emphasis
  - Stable growth expected

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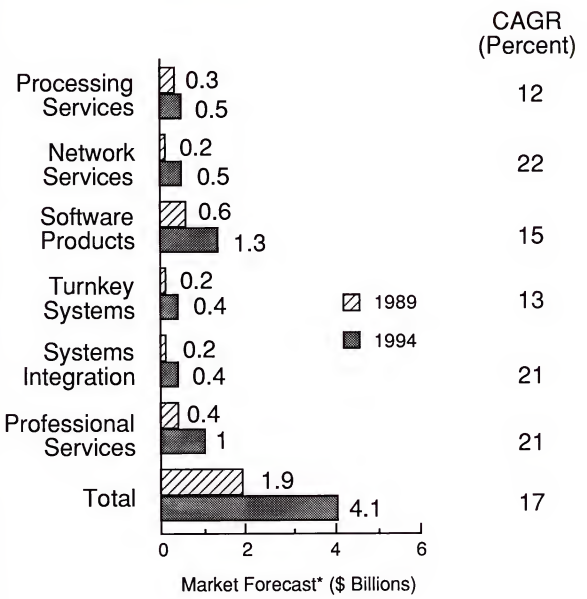
Market Forecast

Australia, 1989-1994



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Market Forecast—Australia

Trends and Influences

- Key technology trends
  - Skills development
  - Industry-specific applications
  - Network services development
  - Product/service import
  - DBMS/4GL development
  - Data base access
- Driving forces
  - Privitization
  - Industrial expansion
  - Financial services expansion
  - Mini-based applications
  - Network development
- Inhibiting forces
  - Unionism
  - Skilled labor shortage
  - Infant industry

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Market Forecast—Australia

Market Entry Considerations

- Immature market
- Extended growth period
- Distributors seeking relationships
- Knowledge/training a problem
- Good long-term opportunities

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Market Forecast—Australia

Product/Service Opportunities

- Industry-specific applications software
- Network services
- DBMS/4GL
- Systems integration
- Professional services

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Brazil

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Market Forecast—Brazil

Political/Economic Setting

- Political environment changing
  - New constitution being formed
  - Global community orientation growing
  - Political coalition fostering peaceful change
- Economic environment uncertain
  - Heavy foreign debt burden continues
  - Limited economic funds for growth
  - Limited moderation of protectionism
  - Investment regulations being revised

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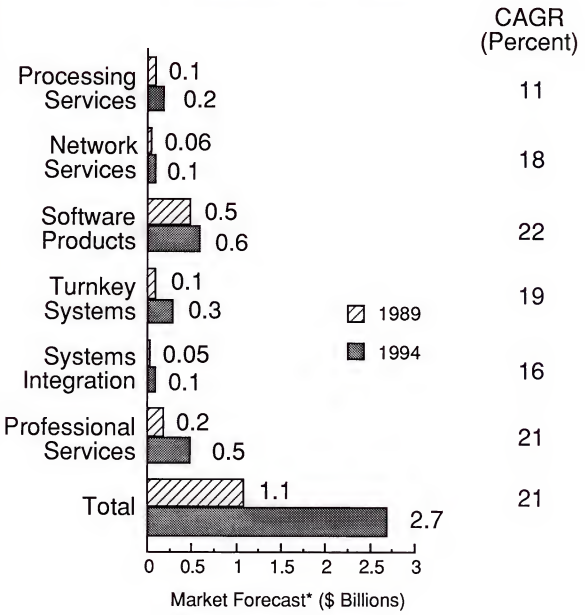
Market Forecast

Brazil, 1989-1994



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Market Forecast—Brazil

Trends and Influences

- Key technology trends
  - Infrastructure development
  - Local industry development
  - Network development
- Driving forces
  - Political stability
  - Copyright law enforcement
  - Informatics law end
  - Relaxed investment policies/procedures
- Inhibiting forces
  - Protectionism
  - Complex entry procedures
  - Entry restriction
  - Economic stability

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Market Forecast—Brazil

Market Entry Considerations

- Entry process long and complex
- Representative relationship recommended
- Product ownership in question
- Long-term opportunities

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Market Forecast—Brazil

Product/Service Opportunities

- Network services
- Professional services

- Software products (maybe)

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Canada

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Market Forecast—Canada

Political/Economic Setting

- Political climate very favorable
  - Strong U.S.-Canadian ties
  - Recognize value of technology
  - Few investment restrictions
- Economy set for growth
  - Technology investments being stimulated
  - Change fostered by change in world markets
  - Foreign investment encouraged

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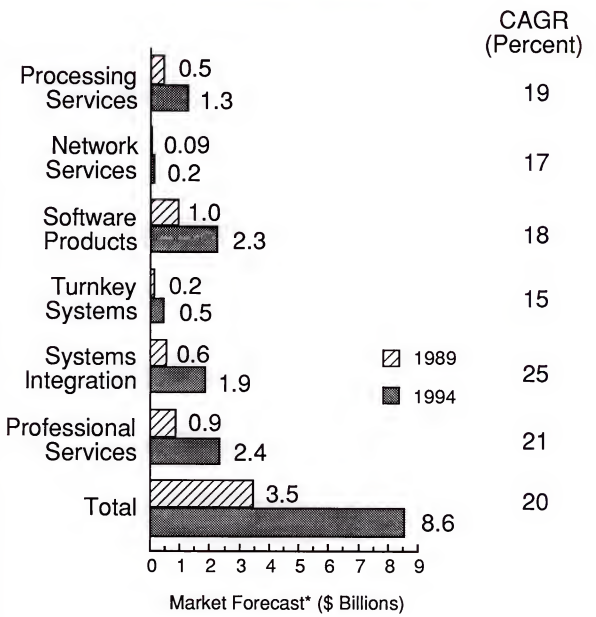
Market Forecast

Canada, 1989-1994



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Market Forecast—Canada

Trends and Influences

- Key technology trends
  - Increased technology investment
  - Increasingly integrated systems
  - Expanded DBMS/4GL
  - Enhanced local/national networking
  - Centralization
  - Vertical market emphasis
- Driving forces
  - Worldwide market position
  - Trade agreement
  - Government technology development
  - New systems development tools
  - Mini/micro systems
- Inhibiting forces
  - Isolationism
  - U.S. dominance
  - Geographic area
  - Language requirements

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Market Forecast—Canada

Market Entry Considerations

- Good long-term prospects
- Some anti-American bias
- Representation recommended
- Many small firms
  - 15% computerized
- Strong French influence (Quebec)
  - French language required
  - French marketing orientation
- Entré to French national market
  - French Canadian partnership

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Market Forecast—Canada

Product/Service Opportunities

- DBMS/4GL
- Vertical market software
- Systems integration
- Professional services

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France

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Market Forecast—France

Political/Economic Setting

- Unemployment still 9.8%
- Steady GDP growth at 2.5%
- No general elections until May 1993
- New government credo—nation's revenue split equally: the people/companies/investors

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Market Forecast—France

Trends/Influences
(Drivers/Inhibitors)

- Strong foreign activity—in particular Spain, but also Italy
- Move into foreign markets through acquisitions rather than subsidiaries
- Acquisitions seen as growth strategies
- More companies on the stock market so greater access to finance
- Lack of marketing expertise due to past pressures from high growth
- Fear to invest in highly competitive (U.S., U.K.) or protected (W. Germany) markets
- Shortage of qualified personnel

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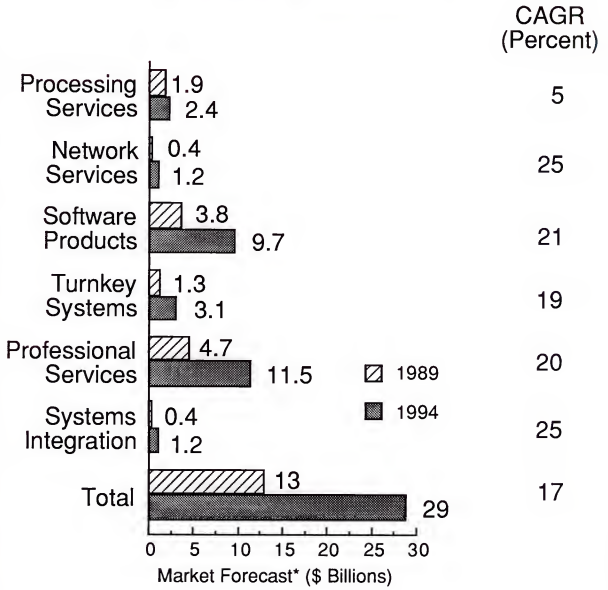
Market Forecast

France, 1989-1994



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Market Forecast—France

Market Entry Considerations

- Standard software products market has not been developed in past and so offers future opportunities
- Potential for sales to the manufacturing sector, specifically CIM
- SI being dominated by larger vendors
- Reluctance to buy foreign
- End user look for high degree of customization even from standard application, so demand for professional services is strong

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Hong Kong

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Market Forecast—Hong Kong

Political/Economic Setting

- Political environment in transition
  - 1997 considerations dominate
  - Little consensus regarding outcome
  - High emigration expected to continue
  - Wait-and-see is key focus
- Economic situation remains strong
  - Few short-term changes expected
  - Long-term questions remain
  - Defensive positions are focus
    - Capital protection is the key
    - Investment periods becoming shorter

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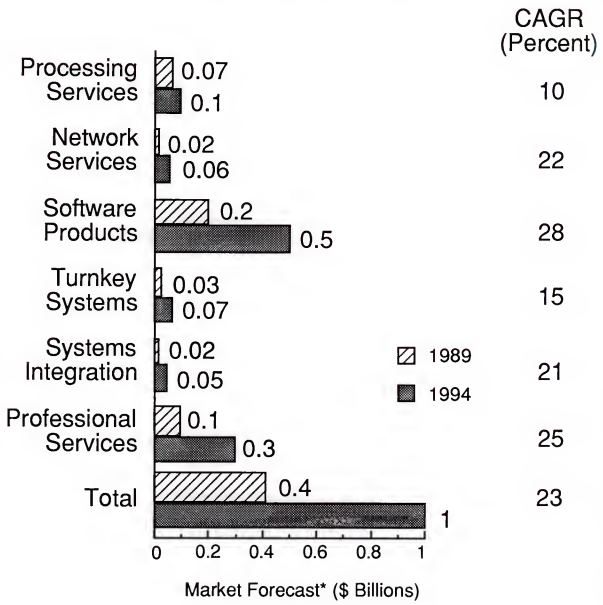
Market Forecast

Hong Kong, 1989-1994



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Market Forecast—Hong Kong

Trends and Influences

- Key technology trends
  - On-line services
  - Gateway services
  - Transaction processing
  - Digital cellular service
  - Software services
- Driving forces
  - Economic freedom
  - Asian entré
  - Technological infrastructure
  - China trade
  - Financial services
- Inhibiting factors
  - Political stability
  - Labor shortage
  - Labor cost
  - Capital flight

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Market Forecast—Hong Kong

Market Entry Considerations

- Entré process easy
- Some anti-western bias
  - Software products notable
- Strong Chinese cultural influence
- Entré to S.E. Asia
- Entry point to the PRC

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Market Forecast—Hong Kong

Product/Service Opportunities

- Network services
- Software/software support
- Professional services

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Japan

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Market Forecast—Japan

Political/Economic Setting

- Political environment stable
  - Little impact from recent events
  - Some pressure for redirection
  - Few changes expected
- Few economic changes
  - Capital investment remains high
  - Trade friction to continue
  - Rate of growth could slow
  - International financial commitments
  - Overall growth substantial

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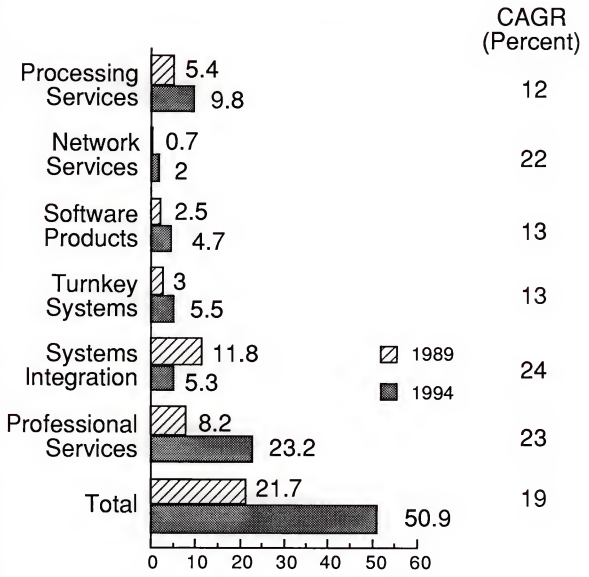
Market Forecast

Japan, 1989-1994



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Market Forecast—Japan

Trends and Influences

- Key technology trends
  - Industrial modernization
  - Software emphasis
  - Partnering
  - Standardization
- Driving forces
  - Globalization of business
  - Increasing competition
  - Government policies
- Inhibiting factors
  - Underdeveloped industry
  - Trade friction
  - Language

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Market Forecast—Japan

Market Entry Considerations

- High market entry cost
- Long-term investment required
- Japan specific products
- Creative products
- Vertical industry products
- Representative agreement recommended

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Market Forecast—Japan

Product/Service Opportunities

- CASE/DBMS products
- CAD/CAM systems
- Decision support systems
- Project management systems
- Network services

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South Korea

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Market Forecast—South Korea

Political/Economic Setting

- Some question over future stability
  - Change demands will continue
  - Some disruption expected
  - North/south friction could grow
  - Few short-term changes expected
  - Longer term generally unknown
- Dynamic economy should continue
  - Strong work ethic
  - Heavy private investment
  - Information technology is key focus

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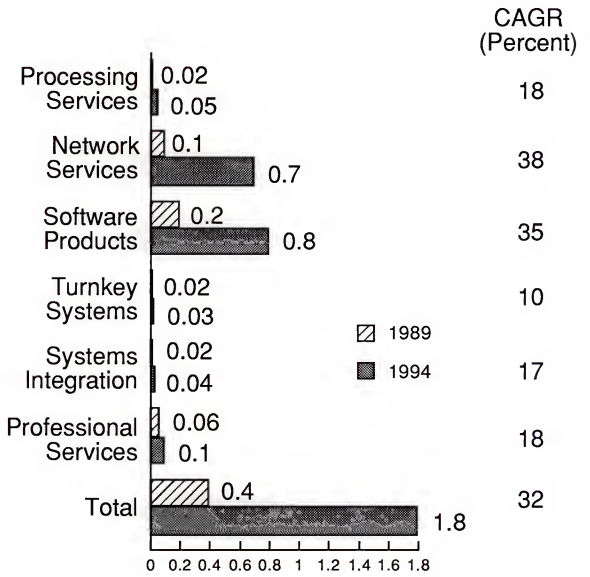
Market Forecast

South Korea, 1989-1994



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Market Forecast—South Korea

Trends and Influences

- Key technology trends
  - Mini/micro systems
  - Decentralized processing
  - Office automation
  - Value-added networks
- Driving forces
  - Industrial modernization
  - Process integration
  - Decentralization
  - Network development
- Inhibiting factors
  - Political stability
  - Protectionist policies
  - Staff shortage
  - Software piracy

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Market Forecast—South Korea

Market Entry Considerations

- Market entry difficult
- Favored industry protection
- Long-term focus necessary
  - Build relationship
- Distributor agreements recommended

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Market Forecast—South Korea

Product/Service Opportunities

- Software products
  - Industry-specific applications
  - Office automation
  - Productivity improvement
- Professional services

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Mexico

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Market Forecast—Mexico

Political/Economic Setting

- Political confidence returning
  - Government cleanup progressing
  - Mixed short-term results
  - Long-term stability in question
  - Foreign investor interest increasing
- Economic restructuring progressing
  - Wage freezes and concessions agreed
  - Reduction in inflation rate
  - Import duty reductions planned
  - Change resistance could mount
  - Long-term situation unknown

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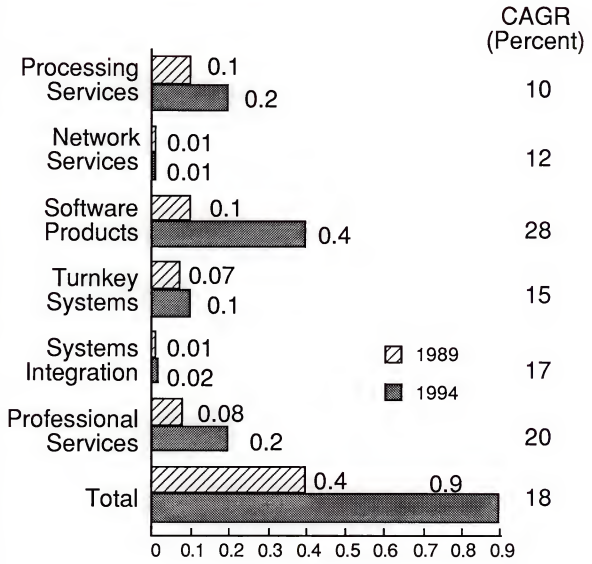
Market Forecast

Mexico, 1989-1994



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Market Forecast—Mexico

Trends and Influences

- Key technology trends
  - Microcomputer growth
  - Industry-specific software
  - Network development/growth
- Driving forces
  - Trade liberalization
  - U.S. influence
  - Microcomputer growth
  - Latin American entré
- Inhibiting factors
  - Economic stability
  - Inflation rate
  - Weak infrastructure
  - Local consultants

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Market Forecast—Mexico

Market Entry Considerations

- Short-term growth limitations
  - Reduced national spending
- Local representation recommended
- Benefit from training local staff

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Market Forecast—Mexico

Product/Service Opportunities

- Software products
- Professional services
- Quality consulting

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United Kingdom

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Market Forecast—United Kingdom

Political/Economic Setting

- Climate of deregulation
- Concentration in southeast
- High interest rates
- High inflation
- Open to foreign competition

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Market Forecast—United Kingdom

Trends/Influences
(Drivers/Inhibitors)

- Financial/insurance sectors strong
- Decentralization of IS departments
- Skills shortage
- Leading EDI in Europe

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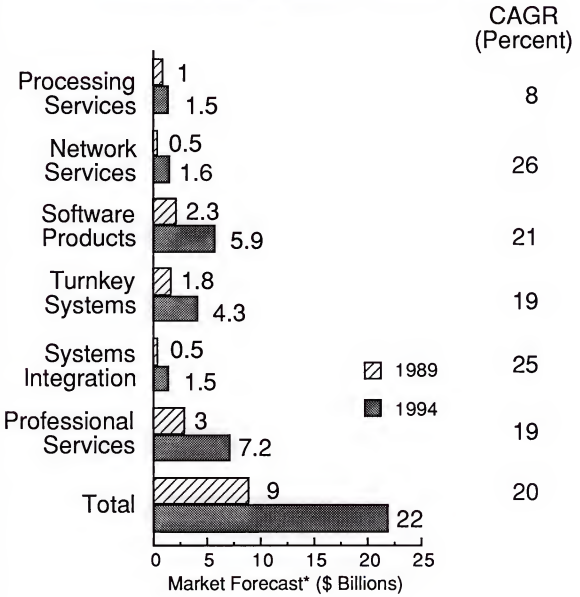
Market Forecast

United Kingdom, 1989-1994



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Market Forecast—United Kingdom

Market Entry Considerations

- Language
- Strong free-lance market
- Relatively unbureaucratic
- Easy mergers and acquisitions environment

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United States

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Market Forecast—United States

Political/Economic Setting

- Slow but steady growth, early 1990s
- Sheer size causes lower growth rates
  - 1988-1993 forecast: CAGR = 17%
  - 1989-1994 forecast: CAGR = 15%
- Declining shipment rates on equipment
- Profit/growth opportunities shift from equipment to software and services
- Increased competition from overseas vendor
- Continuing merger and acquisition activity

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Market Forecast—United States

Trends and Influences

- Users demanding more sophisticated solutions
- Preference for "total solution" vendors
- Standards create short-term confusion, long-term opportunity
- IBM "minority investments" in software services firms create new sphere of influence
- Software complexity creates user confusion
  - Technical differentiation
  - User absorbtion rates
- Emerging technologies drive information services growth
  - Cooperative processing
  - Image processing
  - Knowledge-based systems
  - C++ object-oriented languages
  - Multi-media systems
  - Graphical user interfaces

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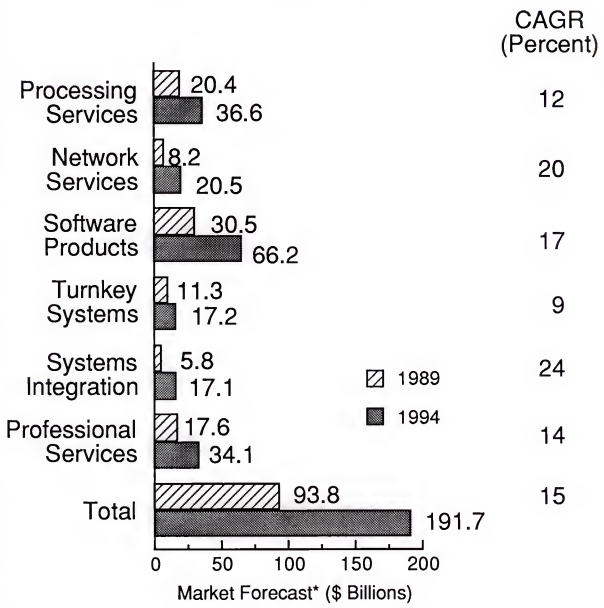
Market Forecast

United States, 1989-1994



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Market Forecast—United States

Market Entry Considerations

- Nearly all target markets have substantial competition, with entrenched leaders
- Alliance (with successful vendors) can expand offerings, open markets
- Buying decisions shifting from information systems managers to end users

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Market Forecast—United States

Product/Service Opportunities

- Software products
  - Application development tools
  - CASE
  - Data center management
  - Integrated applications
- Systems integration
  - Subcontractor niches
- Professional services
  - Revenue opportunity
  - Account control/retention through breadth of services
  - High/low-end market differentiation
- "Globalization" of products and services for international vendors

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Market Forecast—United Kingdom

Political/Economic Setting

- Climate of deregulation
- Concentration in southeast
- High interest rates
- High inflation
- Open to foreign competition

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Market Forecast—United Kingdom

Trends/Influences
(Drivers/Inhibitors)

- Financial/insurance sectors strong
- Decentralization of IS departments
- Skills shortage
- Leading EDI in Europe

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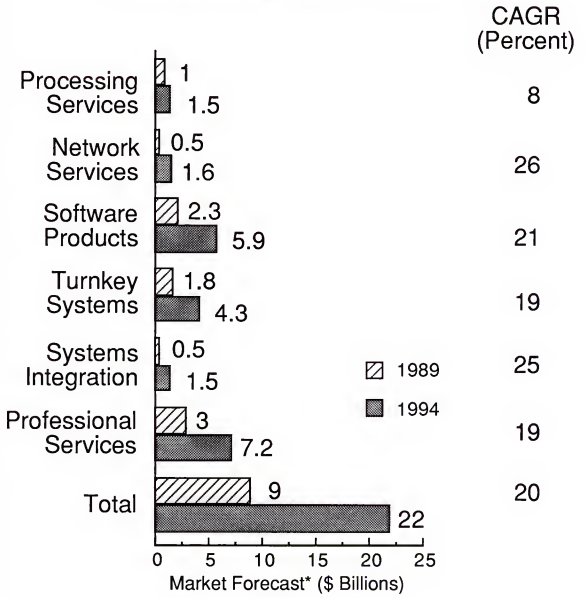
Market Forecast

United Kingdom, 1989-1994



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Market Forecast—United Kingdom

Market Entry Considerations

- Language
- Strong free-lance market
- Relatively unbureaucratic
- Easy mergers and acquisitions environment

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West Germany

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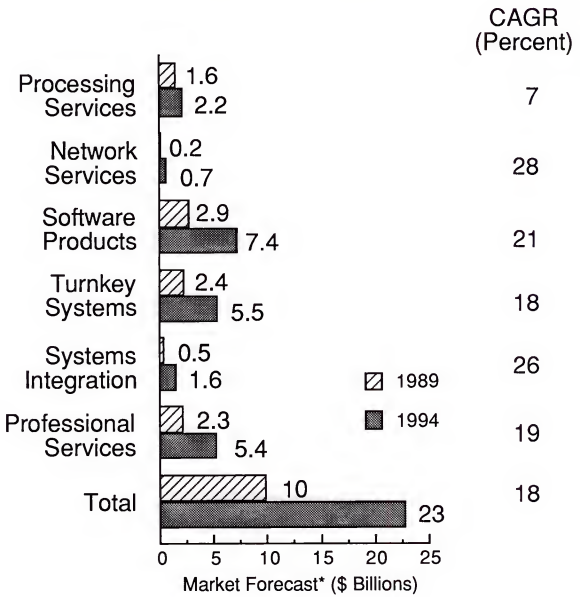
Market Forecast

West Germany, 1989-1994



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Market Forecast—West Germany

Political/Economic Setting

- GDP per capita higher than U.S. (17,696 U.S.$)
- Strong manufacturing base
- Federal system
- Industry sectors localized geographically
- Links to east via Austria and E. Germany
- District foreign software except for U.S.

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Market Forecast—West Germany

Trends/Influences
(Drivers/Inhibitors)

- Strong exporting economy
- Highly regulated
- High labor costs
- Financially conservative
- Strong unions
- National equipment manufacturers

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Market Forecast—West Germany

Market Entry Considerations

- Predominance of small companies
- Powerful banks
- Fragmented market
- Difficult language
- No hostile takeovers
- Lack of risk capital
- High standards/expectations

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Conclusions

- Mini/micro systems role increases
- Need for software productivity tools
- Industry-specific applications desired
- Software piracy remains an issue
- Network development has high priority
- Software quality is an issue
- Rising expectation for software support
- World economic factors affect information services investments

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Recommendations for International Expansion

- Establish relationships
- Make long-term commitments
- Develop country-specific marketing strategies
- Develop country-specific pricing policies
- Adapt to local conditions, business environment
- Consider "customized" products and services
- Bring added value to local economy

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Appendix

Preliminary forecast data base

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INFORMATION SERVICES INDUSTRY
User Expenditure Forecast
By Delivery Mode, 1989-1994
($ Millions)

Delivery Mode	1988	Growth 88-89 (%)	1989	1990	1991	1992	1993	1994	CAGR 89-94 (%)
Total Argentina Information Services Market	302	18%	356	422	500	595	710	849	19%
Processing Services	56	10%	62	68	75	82	91	100	10%
-Transaction Processing Services	11	13%	12	14	16	18	20	23	13%
-Systems Operations	28	9%	31	33	36	40	43	47	9%
-Utility Processing	11	10%	12	13	15	16	18	19	10%
-Other Processing	6	10%	7	7	8	9	10	11	10%
Network/Electronic Information Services	12	15%	14	16	18	21	24	28	15%
-Electronic Information Services	10	15%	12	13	15	17	20	23	15%
-Network Applications	2	14%	2	3	3	3	4	4	14%
Application Software Products	73	25%	91	114	143	178	223	278	25%
-Sale/Lease									
-Support Maintenance									
Systems Software	43	23%	53	65	81	100	123	152	23%
-System Ctrl Soft	26	25%	33	41	51	63	79	99	25%
-Data Ctr. Mgt.	4	12%	4	5	6	6	7	8	12%
-Appl. Dev.	13	23%	16	20	24	30	37	45	23%
Turnkey Systems	34	15%	39	45	52	61	70	82	16%
-Equipment	18	10%	20	22	24	26	29	32	10%
-Packaged Software	8	25%	10	13	16	20	24	31	25%
-Other Prof. Svcs.	2	20%	2	3	3	4	5	6	20%
-Professional Services	6	15%	7	8	9	10	12	14	15%
Systems Integration	25	11%	28	31	35	39	43	48	12%
-Equipment	7	10%	8	8	9	10	11	12	10%
-Packaged Software	11	11%	12	14	15	17	19	21	11%
-Other Services	1	4%	1	1	1	1	1	1	4%
-Professional Services	6	15%	7	8	9	10	12	14	15%
Professional Services	59	18%	70	82	97	115	136	161	18%
-Consulting	15	20%	18	22	26	31	37	45	20%
-Education & Training	10	18%	12	14	16	19	23	27	18%
-Software Development	32	18%	38	45	53	62	73	86	18%
-Systems Operations	2	5%	2	2	2	2	3	3	5%

INFORMATION SERVICES INDUSTRY
User Expenditure Forecast
By Delivery Mode, 1989-1994
($ Millions)

Delivery Mode	1988	Growth 88-89 (%)	1989	1990	1991	1992	1993	1994	CAGR 89-94 (%)
Total Australia Services Market	1636	16%	1890	2200	2564	2993	3499	4096	17%
Processing Services	262	12%	293	327	365	408	456	509	12%
-Transaction Processing Services	170	12%	190	213	239	267	300	336	12%
-Systems Operations	55	10%	61	67	73	81	89	97	10%
-Utility Processing	13	8%	14	15	16	18	19	21	8%
-Other Processing	24	15%	28	32	37	42	48	56	15%
Network/Electronic Information Services	148	22%	181	221	269	329	401	489	22%
-Electronic Information Services	121	22%	148	181	220	269	328	400	22%
-Network Applications	27	22%	33	40	49	60	73	89	22%
Application Software Products	294	15%	338	389	447	514	591	680	15%
-Sale/Lease	235	12%	270	311	357	411	472	543	15%
-Support/Maintenance	59	12%	68	78	90	103	119	137	15%
Systems Software	278	12%	310	355	406	464	531	608	14%
-System Ctrl Soft	117	12%	131	151	173	199	229	264	15%
-Data Ctr Mgt.	58	10%	64	71	80	90	100	112	12%
-Appl. Dev.	103	12%	115	133	153	175	202	232	15%
Turnkey Systems	196	11%	217	244	274	309	348	393	13%
-Equipment	96	8%	104	114	125	138	152	167	10%
-Packaged Software	49	10%	54	59	65	72	79	87	10%
-Other Prof. Svcs	18	18%	21	25	31	37	44	53	20%
-Professional Services	33	15%	38	45	53	62	74	87	18%
Systems Integration	131	21%	158	191	231	280	340	412	21%
-Equipment	59	19%	70	84	99	118	141	168	19%
-Packaged Software	13	18%	15	18	21	25	30	35	18%
-Other Services	8	11%	9	10	11	12	13	15	11%
-Professional Services	51	25%	64	80	100	125	156	195	25%
Professional Services	327	20%	394	474	571	689	832	1004	21%
-Consulting	69	25%	86	108	135	168	211	263	25%
-Education & Training	39	20%	47	56	67	81	97	116	20%
-Software Development	190	20%	228	274	328	394	473	567	20%
-Systems Operations	29	12%	32	36	41	46	51	57	12%

INFORMATION SERVICES INDUSTRY
User Expenditure Forecast
By Delivery Mode, 1989-1994
($ Millions)

Delivery Mode	1988	Growth 88-89 (%)	1989	1990	1991	1992	1993	1994	CAGR 89-94 (%)
Total Brazil Information Services Market	892	19%	1061	1275	1534	1850	2237	2709	21%
Processing Services	114	10%	126	139	154	171	190	211	11%
-Transaction Processing Services	23	12%	26	30	34	39	45	52	15%
-Systems Operations	57	10%	63	69	76	83	92	101	10%
-Utility Processing	22	9%	24	26	28	31	34	37	9%
-Other Processing	12	10%	13	15	16	18	19	21	10%
Network/Electronic Information Services	47	18%	55	65	76	90	106	125	18%
-Electronic Information Services	38	18%	45	53	62	74	87	103	18%
-Network Applications	9	16%	10	12	14	16	19	22	16%
Application Software Products	208	25%	260	325	406	508	635	793	25%
-Sale/Lease									
-Support Maintenance									
Systems Software	188	23%	231	283	346	423	518	634	22%
-System Ctrl Soft	113	25%	141	172	210	256	313	382	22%
-Data Ctr. Mgt.	19	15%	22	25	29	33	38	44	15%
-Appl. Dev.	56	22%	68	85	107	133	167	208	25%
Turnkey Systems	111	15%	128	151	178	211	252	302	19%
-Equipment	56	10%	62	68	75	82	90	99	10%
-Packaged Software	27	25%	34	43	55	71	91	116	28%
-Other Prof. Svcs.	8	20%	10	12	15	19	23	29	25%
-Professional Services	20	15%	23	28	33	40	48	57	20%
Systems Integration	45	12%	50	58	67	77	90	104	16%
-Equipment	21	10%	23	26	29	32	36	41	12%
-Packaged Software	4	11%	4	5	6	7	8	9	15%
-Other Services	2	4%	2	2	2	2	3	3	6%
-Professional Services	18	15%	21	25	30	36	43	52	20%
Professional Services	179	18%	211	254	306	370	446	540	21%
-Consulting	46	20%	55	69	86	108	135	168	25%
-Education & Training	28	16%	32	38	45	53	63	74	18%
-Software Development	98	18%	116	139	167	200	240	288	20%
-Systems Operations	7	5%	7	8	8	9	9	9	5%

INFORMATION SERVICES INDUSTRY
User Expenditure Forecast
By Delivery Mode, 1989-1994
($ Millions)

Delivery Mode	1988	Growth 88-89 (%)	1989	1990	1991	1992	1993	1994	CAGR 89-94 (%)
Total Canada Information Services Market	2904	20%	3473	4158	4984	5981	7187	8647	20%
Processing Services	461	19%	548	651	775	922	1097	1305	19%
-Transaction Processing Services	355	20%	426	511	613	736	883	1060	20%
-Systems Operations	37	15%	43	49	56	65	74	86	15%
-Utility Processing	46	15%	53	61	70	80	93	106	15%
-Other Processing	23	15%	26	30	35	40	46	53	15%
Network/Electronic Information Services	75	17%	88	103	121	142	167	197	17%
-Electronic Information Services	60	15%	69	79	91	105	121	139	15%
-Network Applications	15	25%	19	24	30	37	46	58	25%
Application Software Products	450	15%	518	595	684	787	905	1041	15%
-Sale/Lease	360	15%	414	476	548	630	724	833	15%
-Support/Maintenance	90	15%	104	119	137	157	181	208	15%
Systems Software	437	20%	524	630	756	907	1089	1308	20%
-System Ctrl Soft	166	19%	198	235	280	333	396	471	19%
-Data Ctr Mgt.	184	20%	221	265	318	382	458	549	20%
-Appl. Dev.	87	22%	106	129	158	193	235	287	22%
Turnkey Systems	216	15%	248	286	329	378	434	500	15%
-Equipment	76	15%	87	101	116	133	153	176	15%
-Packaged Software	93	15%	107	123	141	163	187	215	15%
-Other Prof. Svcs	10	15%	12	13	15	17	20	23	15%
-Professional Services	37	15%	43	49	56	65	74	86	15%
Systems Integration	496	25%	619	773	967	1211	1517	1904	25%
-Equipment	198	23%	244	300	368	453	557	686	23%
-Packaged Software	25	22%	31	37	45	55	68	82	22%
-Other Services	99	20%	119	143	171	205	246	296	20%
-Professional Services	174	30%	226	294	382	497	646	840	30%
Professional Services	769	21%	928	1120	1353	1635	1978	2394	21%
-Consulting	192	25%	240	300	375	469	586	732	25%
-Education & Training	53	18%	63	74	87	103	121	143	18%
-Software Development	478	20%	574	688	826	991	1189	1427	20%
-Systems Operations	46	12%	52	58	65	72	81	91	12%

INFORMATION SERVICES INDUSTRY
User Expenditure Forecast
By Delivery Mode, 1989-1994
($ Millions)

Delivery Mode	1988	Growth 88-89 (%)	1989	1990	1991	1992	1993	1994	CAGR 89-94 (%)
Total Eastern Europe Information Services Market	0.09	14%	0.11	0.12	0.14	0.16	0.18	0.20	14%
Processing Services	0.01	10%	0.01	0.01	0.01	0.01	0.01	0.01	10%
-Transaction Processing Services									
-Systems Operations									
-Utility Processing									
-Other Processing									
Network/Electronic Information Services	0.00	N/A							N/A
-Electronic Information Services									
-Network Applications									
Application Software Products	0.05	15%	0.05	0.06	0.07	0.08	0.09	0.11	15%
-Sale/Lease									
-Support Maintenance									
Systems Software	0.02	10%	0.02	0.02	0.02	0.03	0.03	0.03	10%
-System Ctrl Soft									
-Data Ctr. Mgt.									
-Appl. Dev.									
Turnkey Systems	0.01	15%	0.01	0.01	0.01	0.02	0.02	0.02	15%
-Equipment									
-Packaged Software									
-Other Prof. Svcs.									
-Professional Services									
Systems Integration	0.00	N/A							N/A
-Equipment									
-Packaged Software									
-Other Services									
-Professional Services									
Professional Services	0.01	15%	0.02	0.02	0.02	0.02	0.03	0.03	15%
-Consulting									
-Education & Training									
-Software Development									
-Systems Operations									

INFORMATION SERVICES INDUSTRY
User Expenditure Forecast
By Delivery Mode, 1989-1994
($ Millions)

Delivery Mode	1988	Growth 88-89 (%)	1989	1990	1991	1992	1993	1994	CAGR 89-94 (%)
Total ~~French~~ France Information Services Market	10.5	19%	12.4	14.7	17.4	20.7	24.7	29.4	19%
Processing Services	1.8	5%	1.9	2.0	2.1	2.2	2.3	2.4	5%
-Transaction Processing Services									
-Systems Operations									
-Utility Processing									
-Other Processing									
Network/Electronic Information Services	0.3	33%	0.4	0.5	0.6	0.8	1.0	1.2	25%
-Electronic Information Services									
-Network Applications									
Software Products	3.1	22%	3.8	4.6	5.5	6.7	8.1	9.8	21%
Turnkey Systems	1.1	18%	1.3	1.5	1.8	2.2	2.6	3.1	19%
-Equipment									
-Packaged Software									
-Other Prof. Svcs.									
-Professional Services									
Systems Integration	0.3	33%	0.4	0.5	0.6	0.8	1.0	1.2	25%
-Equipment									
-Packaged Software									
-Other Services									
-Professional Services									
Professional Services	3.9	20%	4.7	5.6	6.7	8.1	9.7	11.6	20%
-Consulting									
-Education & Training									
-Software Development									
-Systems Operations									

INFORMATION SERVICES INDUSTRY
User Expenditure Forecast
By Delivery Mode, 1989-1994
($ Millions)

Delivery Mode	1988	Growth 88-89 (%)	1989	1990	1991	1992	1993	1994 *	CAGR 89-94 (%)
Total Hong Kong Information Services Market	322	21%	389	475	581	713	878	1084	23%
Processing Services	64	10%	71	78	86	95	104	115	10%
-Transaction Processing Services	32	11%	36	39	44	49	54	60	11%
-Systems Operations	16	9%	17	19	21	23	25	27	9%
-Utility Processing	10	10%	11	12	13	15	16	18	10%
-Other Processing	6	10%	7	7	8	9	10	11	10%
Network/Electronic Information Services	19	20%	23	28	34	41	50	61	22%
-Electronic Information Services	8	19%	10	12	14	17	21	26	22%
-Network Applications	11	20%	13	16	20	24	29	36	22%
Application Software Products	60	30%	78	101	132	171	223	290	30%
-Sale/Lease									
-Support Maintenance									
Systems Software	58	25%	72	90	112	140	175	218	25%
-System Ctrl Soft	29	27%	37	47	59	75	96	122	27%
-Data Ctr. Mgt.	17	20%	20	24	29	35	42	51	20%
-Appl. Dev.	12	25%	15	19	23	29	37	46	25%
Turnkey Systems	29	11%	32	37	43	50	57	66	15%
-Equipment	14	10%	15	18	21	25	30	35	18%
-Packaged Software	7	10%	8	8	9	10	11	12	10%
-Other Prof. Svcs.	3	15%	3	4	5	5	6	7	15%
-Professional Services	5	15%	6	7	8	9	10	12	15%
Systems Integration	16	20%	19	23	28	33	40	49	21%
-Equipment	8	20%	10	12	14	17	20	24	20%
-Packaged Software	2	12%	2	3	3	3	4	4	12%
-Other Services	2	8%	2	2	3	3	3	3	8%
-Professional Services	4	28%	5	7	8	11	14	18	28%
Professional Services	76	24%	95	118	147	183	228	285	25%
-Consulting	15	30%	20	25	33	43	56	72	30%
-Education & Training	9	19%	11	13	15	18	21	26	19%
-Software Development	46	25%	58	72	90	112	140	175	25%
-Systems Operations	6	14%	7	8	9	10	11	12	12%

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By Delivery Mode, 1989-1994
($ Millions)

Delivery Mode	1988	Growth 88-89 (%)	1989	1990	1991	1992	1993	1994	CAGR 89-94 (%)
Total India Information Services Market	106	33%	141	188	251	338	456	617	34%
Processing Services	11	10%	12	13	15	16	18	19	10%
-Transaction Processing Services									
-Systems Operations									
-Utility Processing									
-Other Processing									
Network/Electronic Information Services	4	18%	5	6	7	8	10	12	20%
-Electronic Information Services									
-Network Applications									
Application Software Products	27	35%	36	49	66	90	121	163	35%
-Sale/Lease									
-Support Maintenance									
Systems Software	16	30%	21	27	35	46	59	77	30%
-System Ctrl Soft									
-Data Ctr. Mgt.									
-Appl. Dev.									
Turnkey Systems	6	30%	8	10	13	17	22	29	30%
-Equipment									
-Packaged Software									
-Other Prof. Svcs.									
-Professional Services									
Systems Integration	0	N/A							N/A
-Equipment									
-Packaged Software									
-Other Services									
-Professional Services									
Professional Services	42	40%	59	82	115	161	226	316	40%
-Consulting									
-Education & Training									
-Software Development									
-Systems Operations									

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User Expenditure Forecast
By Delivery Mode, 1989-1994
($ Millions)

Delivery Mode	1988	Growth 88-89 (%)	1989	1990	1991	1992	1993	1994	CAGR 89-94 (%)
Total Italy Information Services Market	4.8	20%	5.8	7.0	8.5	10.2	12.4	15.1	21%
Processing Services	0.8	8%	0.9	0.9	1.0	1.1	1.2	1.3	8%
-Transaction Processing Services									
-Systems Operations									
-Utility Processing									
-Other Processing									
Network/Electronic Information Services	0.1	33%	0.1	0.2	0.2	0.3	0.4	0.5	33%
-Electronic Information Services									
-Network Applications									
Software Products	1.9	22%	2.3	2.8	3.5	4.3	5.2	6.4	22%
Turnkey Systems	0.4	14%	0.5	0.5	0.7	0.8	1.0	1.2	20%
-Equipment									
-Packaged Software									
-Other Prof. Svcs.									
-Professional Services									
Systems Integration	0.1	29%	0.2	0.2	0.3	0.4	0.5	0.7	30%
-Equipment									
-Packaged Software									
-Other Services									
-Professional Services									
Professional Services	1.5	25%	1.9	2.3	2.8	3.4	4.2	5.1	22%
-Consulting									
-Education & Training									
-Software Development									
-Systems Operations									

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User Expenditure Forecast
By Delivery Mode, 1989-1994
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Delivery Mode	1988	Growth 88-89 (%)	1989	1990	1991	1992	1993	1994	CAGR 89-94 (%)
Total Japan Services Market	18770	16%	21685	25560	30226	35860	42679	50952	19%
Processing Services	4910	11%	5438	6101	6854	7708	8676	9774	12%
-Transaction Processing Services	3191	10%	3510	3931	4403	4931	5523	6186	12%
-Systems Operations	1031	15%	1186	1363	1568	1803	2074	2385	15%
-Utility Processing	246	-5%	234	222	211	200	190	181	-5%
-Other Processing	442	15%	508	585	672	773	889	1022	15%
Network/Electronic Information Services	605	22%	739	902	1100	1342	1637	1997	22%
-Electronic Information Services	484	22%	591	721	880	1073	1309	1597	22%
-Network Applications	121	22%	148	181	220	269	328	400	22%
Application Software Products	1115	15%	1282	1475	1696	1950	2243	2579	15%
-Sale/Lease	892	15%	1026	1180	1357	1560	1794	2064	15%
-Support/Maintenance	223	15%	256	295	339	390	449	516	15%
Systems Software	1065	15%	1226	1421	1650	1919	2237	2612	16%
-System Ctrl Soft	405	15%	466	536	616	708	815	937	15%
-Data Ctr Mgt.	447	12%	501	561	628	703	788	882	12%
-Appl. Dev.	213	22%	260	325	406	508	634	793	25%
Turnkey Systems	2695	11%	2994	3363	3790	4286	4864	5542	13%
-Equipment	943	10%	1037	1141	1255	1381	1519	1671	10%
-Packaged Software	1159	8%	1252	1352	1460	1577	1703	1839	8%
-Other Prof. Svcs	458	20%	550	687	859	1073	1342	1677	25%
-Professional Services	135	15%	155	183	216	255	301	355	18%
Systems Integration	1480	23%	1817	2236	2758	3412	4231	5260	24%
-Equipment	651	19%	775	922	1097	1305	1554	1849	19%
-Packaged Software	133	18%	157	185	219	258	304	359	18%
-Other Services	104	11%	115	128	142	158	175	195	11%
-Professional Services	592	30%	770	1000	1301	1691	2198	2857	30%
Professional Services	6900	19%	8189	10062	12377	15242	18790	23187	23%
-Consulting	1394	25%	1743	2178	2723	3403	4254	5318	25%
-Education & Training	836	15%	961	1106	1271	1462	1681	1934	15%
-Software Development	4043	18%	4771	5963	7454	9318	11647	14559	25%
-Systems Operations	627	14%	715	815	929	1059	1207	1376	14%

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Delivery Mode	1988	Growth 88-89 (%)	1989	1990	1991	1992	1993	1994	CAGR 89-94 (%)
Total Mexico Information Services Market	358	16%	414	486	572	674	798	947	18%
Processing Services	90	11%	100	110	121	133	147	162	10%
-Transaction Processing Services	18	12%	20	23	27	31	35	41	15%
-Systems Operations	54	10%	59	64	69	75	81	87	8%
-Utility Processing	14	12%	16	18	20	22	25	28	12%
-Other Processing	4	8%	4	5	5	5	6	6	8%
Network/Electronic Information Services	7	10%	8	9	10	11	12	13	12%
-Electronic Information Services	6	10%	7	7	8	9	10	12	12%
-Network Applications	1	8%	1	1	1	1	2	2	10%
Application Software Products	72	25%	90	113	141	176	220	275	25%
-Sale/Lease									
-Support Maintenance									
Systems Software	54	17%	63	75	89	106	127	152	19%
-System Ctrl Soft	22	18%	26	31	37	45	54	65	20%
-Data Ctr. Mgt.	11	8%	12	13	14	16	17	19	10%
-Appl. Dev.	21	20%	25	31	38	46	56	68	22%
Turnkey Systems	64	11%	71	82	94	108	124	142	15%
-Equipment	31	10%	34	38	41	45	50	55	10%
-Packaged Software	15	8%	16	19	23	27	31	37	18%
-Other Prof. Svcs.	7	20%	8	10	13	15	19	23	22%
-Professional Services	11	15%	13	15	17	20	24	28	17%
Systems Integration	7	14%	8	9	10	12	14	17	17%
-Equipment	3	10%	3	4	4	5	5	6	12%
-Packaged Software	1	8%	1	1	1	1	1	1	10%
-Other Services	0.04	6%	0.04	0.05	0.05	0.05	0.06	0.06	8%
-Professional Services	3	20%	4	4	5	7	8	10	22%
Professional Services	64	17%	75	90	108	129	155	186	20%
-Consulting	22	20%	26	33	41	52	64	81	25%
-Education & Training	8	18%	9	11	12	14	17	19	15%
-Software Development	28	16%	32	38	45	53	63	74	18%
-Systems Operations	6	14%	7	8	9	10	11	12	12%

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By Delivery Mode, 1989-1994
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Delivery Mode	1988	Growth 88-89 (%)	1989	1990	1991	1992	1993	1994	CAGR 89-94 (%)
Total Middle East/Africa Information Services Market	620	24%	767	955	1196	1507	1910	2435	26%
Processing Services	198	17%	232	271	317	371	434	508	17%
-Transaction Processing Services									
-Systems Operations									
-Utility Processing									
-Other Processing									
Network/Electronic Information Services	19	10%	21	23	25	28	31	34	10%
-Electronic Information Services									
-Network Applications									
Application Software Products	130	35%	176	238	321	433	585	789	35%
-Sale/Lease	130	35%	176	238	321	433	585	789	35%
-Support Maintenance									
Systems Software	56	10%	62	68	75	82	90	99	10%
-System Ctrl Soft	56	10%	62	68	75	82	90	99	10%
-Data Ctr. Mgt.									
-Appl. Dev.									
Turnkey Systems	74	20%	89	107	128	153	184	221	20%
-Equipment	74	20%	89	107	128	153	184	221	20%
-Packaged Software									
-Other Prof. Svcs.									
-Professional Services									
Systems Integration	19	10%	21	23	25	28	31	34	10%
-Equipment	19	10%	21	23	25	28	31	34	10%
-Packaged Software									
-Other Services									
-Professional Services									
Professional Services	124	35%	167	226	305	412	556	751	35%
-Consulting	124	35%	167	226	305	412	556	751	35%
-Education & Training									
-Software Development									
-Systems Operations									

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By Delivery Mode, 1989-1994
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Delivery Mode	1988	Growth 88-89 (%)	1989	1990	1991	1992	1993	1994	CAGR 89-94 (%)
Total Netherlands Information Services Market	2.2	21%	2.7	3.1	3.7	4.3	5.1	6.0	18%
Processing Services	0.4	5%	0.4	0.4	0.5	0.5	0.5	0.5	5%
-Transaction Processing Services									
-Systems Operations									
-Utility Processing									
-Other Processing									
Network/Electronic Information Services	0.1	23%	0.1	0.1	0.2	0.2	0.2	0.2	13%
-Electronic Information Services									
-Network Applications									
Software Products	0.7	23%	0.9	1.0	1.3	1.5	1.8	2.2	21%
Turnkey Systems	0.2	15%	0.3	0.3	0.4	0.5	0.6	0.8	22%
-Equipment									
-Packaged Software									
-Other Prof. Svcs.									
-Professional Services									
Systems Integration	0.1	28%	0.1	0.1	0.1	0.1	0.2	0.2	24%
-Equipment									
-Packaged Software									
-Other Services									
-Professional Services									
Professional Services	0.7	29%	0.9	1.1	1.2	1.5	1.7	2.0	18%
-Consulting									
-Education & Training									
-Software Development									
-Systems Operations									

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User Expenditure Forecast
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($ Millions)

Delivery Mode	1988	Growth 88-89 (%)	1989	1990	1991	1992	1993	1994	CAGR 89-94 (%)
Total New Zealand Information Market	576	18%	682	808	962	1152	1386	1677	20%
Processing Services	119	18%	140	169	206	250	305	372	22%
-Transaction Processing Services	83	20%	100	125	156	195	243	304	25%
-Systems Operations	18	15%	21	23	26	29	33	36	12%
-Utility Processing	12	10%	13	15	16	18	19	21	10%
-Other Processing	6	10%	7	7	8	9	10	11	10%
Network/Electronic Information Services	28	17%	33	38	44	52	60	70	17%
-Electronic Information Services	22	17%	26	30	35	41	48	56	17%
-Network Applications	6	15%	7	8	9	10	12	14	15%
Application Software Products	92	10%	101	111	122	135	148	163	10%
-Sale/Lease									
-Support Maintenance									
Systems Software	84	12%	94	107	122	140	160	182	14%
-System Ctrl Soft	35	10%	39	44	49	56	63	71	13%
-Data Ctr. Mgt.	18	15%	21	24	27	31	36	42	15%
-Appl. Dev.	31	12%	35	40	46	53	61	70	15%
Turnkey Systems	105	10%	116	130	146	164	184	207	12%
-Equipment	51	8%	55	61	67	73	81	89	10%
-Packaged Software	27	8%	29	32	35	39	43	47	10%
-Other Prof. Svcs.	9	18%	11	13	15	18	22	26	20%
-Professional Services	18	15%	21	24	28	33	39	45	17%
Systems Integration	31	21%	37	44	52	61	72	84	18%
-Equipment	14	19%	17	19	22	25	29	34	15%
-Packaged Software	3	18%	4	4	5	5	6	7	15%
-Other Services	2	11%	2	2	3	3	3	3	8%
-Professional Services	12	25%	15	18	22	27	33	41	22%
Professional Services	117	37%	161	208	270	351	458	597	30%
-Consulting	24	47%	35	48	64	87	117	158	35%
-Education & Training	14	35%	19	25	32	42	54	70	30%
-Software Development	68	38%	94	122	159	206	268	348	30%
-Systems Operations	11	15%	13	14	15	17	19	20	10%

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Delivery Mode	1988	Growth 88-89 (%)	1989	1990	1991	1992	1993	1994	CAGR 89-94 (%)
Total Other Asia Pacific Information Services Market	148	19%	177	212	254	306	370	447	20%
Processing Services	11	10%	12	13	15	16	18	19	10%
-Transaction Processing Services									
-Systems Operations									
-Utility Processing									
-Other Processing									
Network/Electronic Information Services	8	25%	10	13	16	20	24	31	25%
-Electronic Information Services									
-Network Applications									
Application Software Products	60	25%	75	94	117	146	183	229	25%
-Sale/Lease									
-Support Maintenance									
Systems Software	38	20%	46	55	66	79	95	113	20%
-System Ctrl Soft									
-Data Ctr. Mgt.									
-Appl. Dev.									
Turnkey Systems	11	10%	12	13	15	16	18	19	10%
-Equipment									
-Packaged Software									
-Other Prof. Svcs.									
-Professional Services									
Systems Integration	5	10%	6	6	7	7	8	9	10%
-Equipment									
-Packaged Software									
-Other Services									
-Professional Services									
Professional Services	15	10%	17	18	20	22	24	27	10%
-Consulting									
-Education & Training									
-Software Development									
-Systems Operations									

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Delivery Mode	1988	Growth 88-89 (%)	1989	1990	1991	1992	1993	1994	CAGR 89-94 (%)
Total Other Latin American Information Services Market	400	18%	471	556	659	783	933	1115	19%
Processing Services	60	5%	63	66	69	73	77	80	5%
-Transaction Processing Services									
-Systems Operations									
-Utility Processing									
-Other Processing									
Network/Electronic Information Services	12	10%	13	15	16	18	19	21	10%
-Electronic Information Services									
-Network Applications									
Application Software Products	120	25%	150	188	234	293	366	458	25%
-Sale/Lease									
-Support Maintenance									
Systems Software	80	20%	96	115	138	166	199	239	20%
-System Ctrl Soft									
-Data Ctr. Mgt.									
-Appl. Dev.									
Turnkey Systems	80	15%	92	106	122	140	161	185	15%
-Equipment									
-Packaged Software									
-Other Prof. Svcs.									
-Professional Services									
Systems Integration	8	8%	9	9	10	11	12	13	8%
-Equipment									
-Packaged Software									
-Other Services									
-Professional Services									
Professional Services	40	20%	48	58	69	83	100	119	20%
-Consulting									
-Education & Training									
-Software Development									
-Systems Operations									

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($ Millions)

Delivery Mode	1988	Growth 88-89 (%)	1989	1990	1991	1992	1993	1994	CAGR 89-94 (%)
Total Singapore Information Services Market	413	17%	483	571	675	800	950	1131	19%
Processing Services	112	12%	125	140	157	176	197	221	12%
-Transaction Processing Services									
-Systems Operations									
-Utility Processing									
-Other Processing									
Network/Electronic Information Services	33	20%	40	50	62	77	97	121	25%
-Electronic Information Services									
-Network Applications									
Application Software Products	66	18%	78	93	112	135	161	194	20%
-Sale/Lease									
-Support Maintenance									
Systems Software	62	18%	73	86	102	120	142	167	18%
-System Ctrl Soft									
-Data Ctr. Mgt.									
-Appl. Dev.									
Turnkey Systems	45	10%	50	54	60	66	72	80	10%
-Equipment									
-Packaged Software									
-Other Prof. Svcs.									
-Professional Services									
Systems Integration	17	20%	20	24	29	35	42	51	20%
-Equipment									
-Packaged Software									
-Other Services									
-Professional Services									
Professional Services	78	25%	98	122	152	190	238	298	25%
-Consulting									
-Education & Training									
-Software Development									
-Systems Operations									

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($ Millions)

Delivery Mode	1988	Growth 88-89 (%)	1989	1990	1991	1992	1993	1994	CAGR 89-94 (%)
Total South Korea Information Services Market	340	30%	443	581	765	1013	1348	1800	32%
Processing Services	17	18%	20	24	28	33	39	46	18%
-Transaction Processing Services	11	19%	13	16	19	22	26	31	19%
-Systems Operations	5	17%	6	7	8	9	11	13	17%
-Utility Processing	1	12%	1	1	1	1	1	1	12%
-Other Processing	0.2	10%	0	0	0	0	0	0	10%
Network/Electronic Information Services	102	38%	141	195	270	373	516	715	38%
-Electronic Information Services	66	40%	92	129	181	254	355	497	40%
-Network Applications	36	35%	49	66	89	120	161	218	35%
Application Software Products	75	35%	101	137	185	249	336	454	35%
-Sale/Lease									
-Support Maintenance									
Systems Software	61	35%	82	111	150	203	275	373	35%
-System Ctrl Soft	28	38%	39	53	71	97	132	180	36%
-Data Ctr. Mgt.	12	27%	15	19	25	31	40	50	27%
-Appl. Dev.	21	36%	29	39	54	75	104	143	38%
Turnkey Systems	17	10%	18	20	22	25	27	30	10%
-Equipment	10	9%	11	12	13	14	15	17	9%
-Packaged Software	3	10%	4	4	4	5	5	5	8%
-Other Prof. Svcs.	1	12%	1	1	1	1	2	2	14%
-Professional Services	3	15%	3	3	4	5	5	6	17%
Systems Integration	18	15%	20	23	27	32	37	44	17%
-Equipment	8	9%	8	9	10	11	12	13	9%
-Packaged Software	2	20%	2	2	3	3	4	5	18%
-Other Services	2	0%	2	2	2	2	2	2	0%
-Professional Services	7	25%	8	10	13	16	20	25	25%
Professional Services	51	18%	60	70	83	98	116	137	18%
-Consulting	11	20%	13	16	19	23	27	33	20%
-Education & Training	8	10%	8	9	10	11	12	14	10%
-Software Development	28	20%	34	40	48	58	70	84	20%
-Systems Operations	4	10%	4	5	5	6	6	7	10%

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Delivery Mode	1988	Growth 88-89 (%)	1989	1990	1991	1992	1993	1994	CAGR 89-94 (%)
Total Spain Information Services Market	1.1	24%	1.4	1.7	2.1	2.6	3.1	3.8	22%
Processing Services	0.2	14%	0.2	0.3	0.3	0.3	0.4	0.4	13%
-Transaction Processing Services									
-Systems Operations									
-Utility Processing									
-Other Processing									
Network/Electronic Information Services	0.0	33%	0.0	0.0	0.1	0.1	0.1	0.2	47%
-Electronic Information Services									
-Network Applications									
Software Products	0.3	26%	0.4	0.5	0.7	0.8	1.0	1.3	24%
Turnkey Systems	0.2	15%	0.3	0.3	0.4	0.5	0.6	0.7	20%
-Equipment									
-Packaged Software									
-Other Prof. Svcs.									
-Professional Services									
Systems Integration	0.0	42%	0.1	0.1	0.1	0.1	0.1	0.2	25%
-Equipment									
-Packaged Software									
-Other Services									
-Professional Services									
Professional Services	0.3	33%	0.4	0.5	0.6	0.7	0.9	1.1	23%
-Consulting									
-Education & Training									
-Software Development									
-Systems Operations									

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($ Millions)

Delivery Mode	1988	Growth 88-89 (%)	1989	1990	1991	1992	1993	1994	CAGR 89-94 (%)
Total Sweden Information Services Market	1.4	17%	1.7	2.0	2.3	2.8	3.3	3.9	18%
Processing Services	0.4	7%	0.4	0.5	0.5	0.5	0.6	0.6	7%
-Transaction Processing Services									
-Systems Operations									
-Utility Processing									
-Other Processing									
Network/Electronic Information Services	0.0	55%	0.0	0.1	0.1	0.1	0.1	0.2	31%
-Electronic Information Services									
-Network Applications									
Software Products	0.3	24%	0.4	0.5	0.6	0.8	1.0	1.2	24%
Turnkey Systems	0.2	13%	0.3	0.3	0.4	0.5	0.6	0.7	19%
-Equipment									
-Packaged Software									
-Other Prof. Svcs.									
-Professional Services									
Systems Integration	0.0	23%	0.0	0.1	0.1	0.1	0.1	0.1	26%
-Equipment									
-Packaged Software									
-Other Services									
-Professional Services									
Professional Services	0.4	21%	0.5	0.6	0.7	0.8	0.9	1.1	18%
-Consulting									
-Education & Training									
-Software Development									
-Systems Operations									

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Delivery Mode	1988	Growth 88-89 (%)	1989	1990	1991	1992	1993	1994	CAGR 89-94 (%)
Total Switzerland Information Services Market	1.5	18%	1.8	2.1	2.4	2.9	3.4	4.0	17%
Processing Services	0.2	7%	0.3	0.3	0.3	0.3	0.3	0.4	7%
-Transaction Processing Services									
-Systems Operations									
-Utility Processing									
-Other Processing									
Network/Electronic Information Services	0.1	19%	0.1	0.1	0.1	0.1	0.2	0.2	15%
-Electronic Information Services									
-Network Applications									
Software Products	0.5	22%	0.6	0.7	0.9	1.0	1.2	1.5	20%
Turnkey Systems	0.2	15%	0.3	0.3	0.4	0.5	0.6	0.7	19%
-Equipment									
-Packaged Software									
-Other Prof. Svcs.									
-Professional Services									
Systems Integration	0.0	34%	0.0	0.1	0.1	0.1	0.1	0.2	27%
-Equipment									
-Packaged Software									
-Other Services									
-Professional Services									
Professional Services	0.4	21%	0.5	0.6	0.7	0.8	0.9	1.1	18%
-Consulting									
-Education & Training									
-Software Development									
-Systems Operations									

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Delivery Mode	1988	Growth 88-89 (%)	1989	1990	1991	1992	1993	1994	CAGR 89-94 (%)
Total Taiwan Information Services Market	255	19%	303	365	440	532	645	783	21%
Processing Services	51	15%	59	68	79	92	107	124	16%
-Transaction Processing Services	15	20%	18	23	28	34	42	52	23%
-Systems Operations	26	12%	29	32	36	40	45	50	12%
-Utility Processing	8	15%	9	10	12	13	15	18	15%
-Other Processing	3	10%	3	3	3	4	4	5	10%
Network/Electronic Information Services	20	24%	25	31	40	51	64	82	27%
-Electronic Information Services	17	25%	21	27	35	45	57	73	28%
-Network Applications	3	18%	4	4	5	6	7	9	20%
Application Software Products	26	28%	33	42	53	68	88	112	28%
-Sale/Lease									
-Support Maintenance									
Systems Software	38	22%	47	58	71	88	108	134	23%
-System Ctrl Soft	19	26%	24	30	37	46	57	70	24%
-Data Ctr. Mgt.	8	18%	9	11	13	16	19	23	19%
-Appl. Dev.	11	22%	13	17	21	26	33	41	25%
Turnkey Systems	46	18%	54	65	78	93	112	135	20%
-Equipment	23	25%	29	36	45	56	70	88	25%
-Packaged Software	11	8%	12	13	14	16	17	19	10%
-Other Prof. Svcs.	4	15%	5	5	6	7	9	10	17%
-Professional Services	8	15%	9	11	12	14	16	19	15%
Systems Integration	10	19%	12	14	17	20	24	28	19%
-Equipment	5	20%	6	7	8	10	12	14	18%
-Packaged Software	1	9%	1	1	1	1	2	2	9%
-Other Services	1	6%	1	1	1	1	1	1	6%
-Professional Services	3	25%	4	5	6	7	9	11	25%
Professional Services	64	16%	74	87	102	121	142	167	18%
-Consulting	13	20%	16	19	23	28	33	40	21%
-Education & Training	8	12%	9	10	11	13	14	16	12%
-Software Development	38	16%	44	52	61	72	85	101	18%
-Systems Operations	5	12%	6	6	7	8	9	10	12%

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Delivery Mode	1988	Growth 88-89 (%)	1989	1990	1991	1992	1993	1994	CAGR 89-94 (%)
Total United Kingdom Information Services Market	7.6	19%	9.0	10.7	12.8	15.4	18.4	22.1	20%
Processing Services	0.9	7%	1.0	1.0	1.1	1.2	1.4	1.5	9%
-Transaction Processing Services									
-Systems Operations									
-Utility Processing									
-Other Processing									
Network/Electronic Information Services	0.4	22%	0.5	0.6	0.8	1.0	1.2	1.6	26%
-Electronic Information Services									
-Network Applications									
Software Products	1.8	23%	2.3	2.7	3.3	4.0	4.9	5.9	21%
Turnkey Systems	1.6	14%	1.8	2.2	2.6	3.1	3.7	4.4	19%
-Equipment									
-Packaged Software									
-Other Prof. Svcs.									
-Professional Services									
Systems Integration	0.4	24%	0.5	0.6	0.8	1.0	1.2	1.5	25%
-Equipment									
-Packaged Software									
-Other Services									
-Professional Services									
Professional Services	2.4	21%	3.0	3.5	4.2	5.0	6.0	7.2	19%
-Consulting									
-Education & Training									
-Software Development									
-Systems Operations									

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Delivery Mode	1988	Growth 88-89 (%)	1989	1990	1991	1992	1993	1994	CAGR 89-94 (%)
U.S.									
Total Information Services Industry	80220	17%	93793	107496	123609	142493	164987	191676	15%
Processing Services	18238	12%	20446	22880	25655	28832	32464	36628	12%
Transaction Processing Services	12003	12%	13466	14840	16380	18110	20050	22230	11%
Utility Processing Services	900	-5%	855	906	961	1018	1079	1144	6%
Other Processing Services	1560	15%	1794	2027	2291	2589	2925	3305	13%
Systems Operations	3775	15%	4331	5107	6024	7115	8410	9948	18%
Network/Electronic Information Services	6706	22%	8184	9783	11723	14081	16956	20468	20%
Electronic Information Services	5466	22%	6667	7943	9476	11318	13535	16205	19%
-Online Databases	4451	20%	5341	6303	7437	8776	10355	12219	18%
-News	1015	31%	1326	1641	2039	2543	3180	3986	25%
Network Applications	1240	22%	1516	1840	2247	2763	3420	4263	23%
-Value-added Networks	690	12%	773	912	1076	1270	1498	1768	18%
-EDI	190	48%	282	414	570	750	990	1350	37%
-Electronic Mail	360	28%	462	514	601	743	932	1145	20%
Application Software Products	13115	20%	15741	17972	20602	23711	27398	31781	15%
Mainframe	4350	11%	4817	5165	5542	5952	6398	6882	7%
Minicomputer	4175	15%	4783	5303	5884	6533	7258	8069	11%
Workstation/PC	4590	34%	6141	7505	9176	11226	13742	16830	22%
Systems Software	12095	22%	14811	17447	20601	24386	28945	34455	18%
Mainframe	5965	15%	6858	7811	8898	10136	11547	13155	14%
Minicomputer	4050	19%	4804	5624	6586	7717	9046	10610	17%
Workstation/PC	2080	51%	3149	4012	5117	6533	8352	10690	28%
Turnkey Systems	10245	10%	11257	12242	13320	14499	15790	17202	9%
Equipment	5523	8%	5965	6442	6957	7514	8115	8764	8%
Packaged Software	2301	8%	2485	2659	2845	3044	3257	3485	7%
Customized Software	838	18%	989	1137	1308	1504	1729	1989	15%
Professional Services	1583	15%	1818	2004	2210	2437	2688	2964	10%
Systems Integration	4801	21%	5797	7159	8878	10920	13655	17090	24%
Equipment	2126	19%	2523	3055	3730	4480	5480	6860	22%
Packaged Software	425	18%	500	600	720	865	1055	1320	21%
Other Services	325	11%	361	408	460	520	590	665	13%
Professional Services	1925	25%	2413	3094	3968	5055	6530	8245	28%
Professional Services	15020	17%	17558	20012	22829	26063	29779	34052	14%
Consulting	3018	20%	3622	4273	5043	5950	7021	8285	18%
Education & Training	1819	18%	2146	2447	2789	3180	3625	4133	14%
Software Development	8780	16%	10185	11509	13005	14696	16606	18765	13%
Systems Operations	1403	14%	1605	1783	1992	2237	2527	2869	12%

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Delivery Mode	1988	Growth 88-89 (%)	1989	1990	1991	1992	1993	1994	CAGR 89-94 (%)
Total Venezuela Information Services Market	278	14%	317	367	425	492	570	662	16%
Processing Services	56	12%	63	70	79	88	99	111	12%
-Transaction Processing Services									
-Systems Operations									
-Utility Processing									
-Other Processing									
Network/Electronic Information Services	11	10%	12	13	15	16	18	19	10%
-Electronic Information Services									
-Network Applications									
Application Software Products	70	18%	83	99	119	143	171	206	20%
-Sale/Lease									
-Support Maintenance									
Systems Software	42	15%	48	56	65	75	87	101	16%
-System Ctrl Soft									
-Data Ctr. Mgt.									
-Appl. Dev.									
Turnkey Systems	33	10%	36	40	44	48	53	58	10%
-Equipment									
-Packaged Software									
-Other Prof. Svcs.									
-Professional Services									
Systems Integration	10	10%	11	12	14	15	17	19	12%
-Equipment									
-Packaged Software									
-Other Services									
-Professional Services									
Professional Services	56	15%	64	76	90	106	125	147	18%
-Consulting									
-Education & Training									
-Software Development									
-Systems Operations									

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Delivery Mode	1988	Growth 88-89 (%)	1989	1990	1991	1992	1993	1994	CAGR 89-94 (%)
Total West Germany Information Services Market	8.4	17%	9.8	11.6	13.6	16.1	19.1	22.7	18%
Processing Services	1.5	7%	1.6	1.7	1.8	1.9	2.1	2.2	7%
-Transaction Processing Services									
-Systems Operations									
-Utility Processing									
-Other Processing									
Network/Electronic Information Services	0.1	40%	0.1	0.2	0.2	0.3	0.4	0.5	28%
-Electronic Information Services									
-Network Applications									
Software Products	2.3	22%	2.9	3.5	4.2	5.1	6.1	7.4	21%
Turnkey Systems	2.2	13%	2.4	2.9	3.4	4.0	4.7	5.6	18%
-Equipment									
-Packaged Software									
-Other Prof. Svcs.									
-Professional Services									
Systems Integration	0.4	27%	0.5	0.6	0.8	1.0	1.3	1.6	26%
-Equipment									
-Packaged Software									
-Other Services									
-Professional Services									
Professional Services	1.9	20%	2.3	2.7	3.2	3.8	4.6	5.4	19%
-Consulting									
-Education & Training									
-Software Development									
-Systems Operations									